A REPORT OF THE INFORMAL MEETING OF ENERGY RESEARCH DONORS held at the International Development Research Centre Ottawa, 20-21 April 1982

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CONTENTS

Introduction

1. Twenty-two participants from seventeen international, regional and national aid organizations (see **Annex I**) met for two days in April in order to:

   (i) provide an informal exchange of information about their current and future activities in the area broadly described as energy research;

   (ii) initiate discussions on the need for and possible forms of mechanisms for improving the effectiveness of such aid.

   The meetings were jointly chaired by Mr. Ivan Head, President of IDRC, and Dr. Enrique Iglesias, Executive Secretary of the UN Economic Commission for Latin America.

2. The need for the meeting arose from a general concern of research fund administrators that official development assistance to research relevant to the energy situation of developing countries was inadequate in a number of respects: in particular there appeared to be wasteful duplication of effort, because there was little knowledge of what each of the agencies was doing; much of the research appeared to be poor in quality and was even ad hoc in its arrangements (see **Annex II**).

3. The discussions were generally held to be useful and this report attempts to record the main points of the discussion. The report is in five sections:

   Section I Current policies and activities of donors

Additional copies of this report may be obtained from:

The Energy Policy Program, IDRC, P.O. Box 8500, Ottawa, K1G 3H9, Canada.

Section II Major themes:
- Information exchange
- Gaps in energy research
- Poor performance over the past 10 years
- Guarding against an energy research donors' cartel
- Elements in a research funding policy

Section III Other issues

Section IV Mechanisms to improve donor support for energy research

Section V Agreed actions

Section I

Current policies and activities of donors

4. Eight agencies specially prepared written statements about their energy research activities related to developing countries (USAID, IBRD, UNDP, the Netherlands, NAS, SAREC, IDRC, UK-ODA). Other agencies provided more general documents which gave background information on their agencies or specific energy activities (UNU, OPEC fund, Federal Republic of Germany, EEC, IEA and Japan). A total of 44 documents were made available to the meeting - see **Annex III.**

5. All participants made a brief verbal presentation about their activities. In general:

   - few agencies (except for BOSTID, IDRC, the Netherlands, and SAREC) are involved in funding "research" in the strict sense;

   - all agencies are in some way involved in energy research in a more general sense; this largely involves research of an exploratory, diagnostic or evaluative nature that is relevant to their own program needs;

   - still fewer agencies consider "energy research" as a specialized activity with separate budget allocations (IDRC and the Netherlands).

   - a number of agencies reported the need to develop internal policies towards research and all agencies felt the need to develop such policies in relation to energy research. Indeed, many agencies reported that the preparation for this meeting constituted the first attempt they had made to consider their activities in support of energy research. However, it was noted that even developed countries had only recently begun to develop consistent energy research policies.

6. The round table presentations suggested the following highlights:

IEA	current initiation of collaboration between developing countries and OECD countries through IEA research "implementing agreements;"
SAREC	provides funds for all types of energy research under its current programs but SAREC's methods of operation do not require funds to be specially earmarked to energy research. Recent years have seen an increase in the number of requests for funds for energy research;
BOSTID	BOSTID has a research grants program for institutions in developing countries. No separate energy research program, but energy component in several program areas such as fast-growing trees and biological nitrogen fixation. Possibility exists that future program areas could focus specifically on some aspects of energy R&D. Active studies program has included many energy topics and suggested research needs. Advisory assistance provided to developing country research programs through seminars and workshops or small advisory teams;
The Netherlands	specialize in technical research (woodstove, producer gas, wind) largely in Holland with a view to technology transfer and training;
IBRD	most energy research is funded as components of project loans to individual countries (e.g. resource assessments, pilot projects, energy pricing or demand studies). In addition, a joint program with UNDP is engaged in a number of country energy assessments. A few cross-country energy policy studies, defined in relation to operational project needs, (e.g. energy pricing, natural gas use, energy demand projection) are undertaken by IBRD staff or consultants;
Germany	most energy research is undertaken through the Ministry of Research (BMFT) and is for national interests; but a few of the 900 projects managed by the JULICH group have relevance for ldc's. The Ministry for Economic Cooperation (BMZ) is to rely increasingly on BMFT for energy research. The German Agency for Technical Cooperation (GTZ) operates, as one of its units, the German Appropriate Technology Exchange (GATE) which supports energy research on both technical and planning issues in developing countries;
EEC	research policy in the past was to respond solely to developing country proposals; they are now preparing a policy paper for energy research and development programs;

UNDP	currently joint sponsors of UNDP/IBRD country energy assessments and state-of-the-art review on windpumping, solar, biogas and urban waste recovery. Recent attempts have been made to delineate energy research needs at regional level. Much duplication, therefore there are current attempts to coordinate all energy activities through the Energy Review Committee;
UN Natural Resources and Energy Division	no explicit policy on energy research funding as they respond solely to country requests. Three major areas of support: resource evaluations (largely geothermal), institutional support for R&D and more recently in new and renewables;
CIDA	finance to energy research is largely through contributions to multilateral agencies such as IBRD, ADB, CFTC, etc. A special contribution of $10 million has been made by the Government to IDRC for a new energy research program. The bulk of bilateral research activity, in the narrow sense, is through the Industrial Cooperation Program through such mechanisms as the Canadian Technology Testing Facility, the Project Preparation Facility, and as announced at Nairobi, the newly established Canadian Renewable Energy Facililty. All fund cooperative activities between Canadian companies and developing country counterparts to test and adapt Canadian technology for transfer to developing countries;
France	while France contributes extensively to energy research, French aid programs are currently under large scale reorganization to bring all elements into a single agency. The Ministry of Research and Technology is likely to have a unit specifically responsible for Third World countries. COMES and other research groups would be fused into a new Agency for Energy Matters;
USAID	no policy or budgets for energy research as such but many projects include broadly defined energy research elements. Considerable emphasis is placed on building institutional capacity. The only explicit energy research project is that at NAS. Activities planned in methodology for evaluating water pumping devices, biogas and stoves field testing (Egypt), reviews of past energy projects in Africa;
Japan	little cooperation on energy research with developing countries so far - cooperation limited to hydro, biogas and geothermal. Energy survey missions have been sent to Philippines, Indonesia, Thailand, China, Bangladesh, Peru and Tunisia. Biomass research has been funded in Brazil, Thailand and Philippines;

IDRC — explicit funds for energy related research. Future emphasis will be on energy policy, forestry biomass, the energy requirements of post-harvest production systems, and information sciences. Research almost exclusively conceived and carried out by developing countries themselves.

Section II

Major themes discussed

A - Information exchange

7. A frequently emerging complaint of the participants was the inadequacy of information:

   At the bureaucratic level - between donors about each other's research activities and policies.

   At the scientific level - between researchers about their energy research activities both in the labs and in the fields.

   At the policy making level - between donors, researchers, and energy policy makers in the developing countries about their respective needs and resources, and about the relevance of their research results.

8. The bureaucratic level: There was a general consensus that a better exchange of information between agencies on their energy research policies and activities is necessary. Much wasteful duplication became apparent during the discussions - some agencies reported that they only had a vague idea of what they themselves were doing. There was a strong suspicion that energy research resources were unintentionally concentrated on a few problems and in a few developing countries. There was a clearly expressed need for a rational overview of current donor activity in the energy field. There was less unanimous agreement, however, on the nature of the information required and the mechanism for exchanging it. The following points were raised:

   - care should be taken in setting up a research project information network because past efforts by the DAC to initiate an information exchange about capital aid projects were unsuccessful due to the irregular submissions by the participating agencies;

   - inventories of all projects supported by various agencies had not worked very well in the past because the collection, assembly, and eventual use of such information was often too time-consuming;

- summaries (similar to the papers prepared for this meeting) of agency energy policy and funding plans, noting trends and new initiatives, would be particularly interesting as these would show what lay "behind" the projects;

- computer print-outs of donor research activity listing each project would be of interest to some agencies - but it was not clear how many entries there would be each year or how much work would be involved in updating it. Some agencies (UNDP and IDRC) already have such listing systems;

- if energy research donors were to seriously consider participating in an information exchange system the objectives of such a system and definitions of "energy" and "research" would have to be clearly spelled out so that the costs and benefits of participation could be anticipated;

- "overlap" and "duplication" of efforts by donors could only be cured by some form of information exchange. But a distinction had to be made between necessary and wasteful duplication. For instance, while energy assessments may be necessary for all countries, three for Tanzania in the space of one year by three different agencies would seem wasteful. Furthermore, the meeting brought to light a number of donor funded research projects which appeared to be on similar topics and which appeared not to build on the work of others (e.g. woodstoves, gasifiers, windmills).

9. At the scientific level: The exchange of better information of a technical nature was a recurring theme. All participants seemed frustrated by the proliferation of state-of-the-art reviews of various technologies that were of poor quality and consequently of little use. Several participants expressed concern that efforts to establish information networks on technical issues should grow out of a perceived need (for example, the Woodstove Group at Eindhoven). But such organic growth would not necessarily include researchers in the Third World who might continue to be isolated from mainstrean communication links unless active steps were taken to involve them.

10. The policy making level: Participants agreed that it is important to support research programs that are consistent with the energy policies of developing countries. To achieve this donors will depend on an input of information from the recipients including information about their country's energy policy, data on energy resources and energy needs (end-use), as well as feedback on technical energy research and energy policy research currently done in the country or region. Participants also felt research should be undertaken in genuine collaboration with developing country institutions both as a means of providing better access to their views and experience and of providing opportunities for strengthening the capabilities of their research institutions and personnel.

11. Several participants felt that negative research results from either the lab or field should be reported and the data collected should be scientifically comparable. Donor agencies had some responsibility for

this by rewarding only the bearers of good news; technologies therefore continue to be developed in a vacuum and old mistakes repeated.

12. In setting up technical information networks and specialist research groups, it was pointed out that there was a danger of isolating the technical issues from the social, economic and political issues. The formation of narrow technical groups had tended in the past to bias the search for solutions towards hardware rather than the many non-technical policy options.

B. Gaps in energy research

13. One of the interesting conclusions to emerge from the information exchange described above is that many of the agencies are mostly or exclusively involved in the areas of renewable and/or rural energy research in ldc's. There is currently relatively little support available for conventional energy research (e.g. electric power, natural gas) or for energy policies analysis.

14. Other gaps in energy research identified by participants include:

The relationship between energy use and the form of socio-economic development: the narrow focus of much of the discussion at the meeting and much earlier research led to the suggestion that too little was known about the broader issues of the links between energy and the style or path of development. Energy was too often considered only as a constraint and the only pattern of development to be considered was that of the currently rich countries. For instance, the assumption that urban growth necessitated growth of electricity generation has not been systematically analyzed. Furthermore, the style of economic development would have major implications for the form and amount of energy used. In this context it was argued that the Brazilian alcohol program might be part of a pattern of development influenced by a Western style of development with a heavy reliance on private motor transport; it was suggested that the program may cost the Brazilians more in foreign exchange for food imports than the foreign exchange saved in reducing oil imports;

Technology is not the problem: there was general consensus that purely scientific/technical hurdles are not the major constraint to solving the energy crisis in the Third World; most of the basic knowledge required is already known. Much of the energy technology likely to be of value to developing countries is not sophisticated. It was argued that the key is to build linkages between developed and developing country institutions to facilitate the building of research capacity and the transfer of technology. There was a clear role for energy research donors to play in this process. However, there was less agreement on what restricts the transfer and diffusion of technology to and within developing countries. It was noted that although most developing countries suffer from similar energy problems, (for example, deforestation) the solutions will differ with geographic, social, similar problems will vary with each country. One element in this capacity is likely to be the "consciousness" or political will of each country which conditions their response to the energy crisis.

C - Poor performance record over past 10 years

15. It was argued that after many years of implementing pilot projects in the energy sector we are little wiser about their effectiveness. The fact that technical research is neither evaluative nor broadly standardized and in many cases is not available to fellow researchers or energy policy makers means that:

- there is little reliable technical data which would allow legitimate comparisons to be made between different small scale energy conversion systems designed to meet a particular end use such as cooking;

- the social and economic factors associated with the various energy conversion systems cannot be compared.

16. Since there are no common standards, technical specifications or methodologies to measure various energy conversion systems, it was currently impossible to compare one woodstove test in Upper Volta against another in Kenya for example. Much energy research activity in the past ten years has been amateurish with little attempt to:
- design competent measures of system performance

- gather data on system performance under field conditions, or

- develop a general consensus on methods for reporting and evaluating the data.

17. Concern was also expressed by a number of participants that much of the technology being diffused in the Third World by aid agencies did not work, was improperly tested, and did not even meet performance standards as specified by the exporting manufacturer or aid agency. It was strongly recommended that technologies should at least be subjected to tests similar to those carried out by consumer groups in the developed countries before being advocated by aid programs. The IEA's program of solar technology testing was noted as another example of the type of testing required. It was suggested that gasifiers were particularly suitable for independent testing.

18. It was suggested that the poor quality of much research was due to the nature of the funding which is often short-term and without a firm commitment of adequate resources. Research priorities had not been identified in terms of priority energy needs; indeed, there had been a particular lack of research on energy end-uses. These issues are described more fully in section E below.

D - Guarding against an energy research donors' cartel:

19. During the discussion of how to improve donor energy research efforts in developing countries by establishing institutional mechanisms and identifying research priorities, a number of participants reminded the meeting of the sentiments of the developing country researchers and

officials such as those who attended the SAREC workshop on the Strengthening of Energy Research Capability in Developing Countries (Stockholm, January 1982). The participants at that meeting felt that:

> "There was general agreement that research priorities should not be determined by the aid donors' preferences,"

and that:

> "Each donor should develop his own individual philosophy and not join en bloc with others in following the swings of development fashion, nor should they "gang up" on developing countries by adopting uniform approaches. The interests of researchers should be borne in mind. In some instances support to informal committees of researchers and officials could be considered to help initiate energy research activities of relevance to the community and country."

E - Elements towards an Energy Research Funding Policy

20. During the course of the meeting a number of issues were discussed which, when taken together, constitute the beginnings of an energy research funding policy for donor agencies. These issues are grouped into five elements:

(i) - The need for a long-term view of energy research

21. The meeting was reminded several times over the course of the two days of the need for a research funding policy and approach that extended beyond one fiscal year, one technical device and one research discipline. In short, it was advocated that research donors should take a systems approach to technical development so that the scope of the research would be longer term and take a wider view. Most donor agencies were thought to have largely financed short-term research that included neither an evaluative component nor any interaction between the labs and the field. Without this combination of skills the comparative advantages of researchers will not be tapped, a systems approach to technical innovation will not be developed, and the proliferation of projects narrowly defined as technical, unevaluated and unmonitored, will continue. A long-term view and long-term commitment to a particular line of research was necessary to capture the lessons of both the good and bad results of current energy research.

22. The poor quality of many state-of-the-art reviews was blamed partly on emphasis in the past on short-term support and the need for quick results. Decisions should be taken now to make sure that the information required in the 1990's be available.

(ii) The interdependence between technical and policy research

23. As noted earlier there was a consensus that technology was not the main constraint. It was generally agreed that energy research funding

should try to counteract the tendency to unidisciplinary research. Technology could not be developed in a social, economic or political vacuum.

24. This sparked a discussion of the synergy between country energy assessments and technology assessments. It was stressed that energy research needs cannot be rationally identified except in relation to a clear picture of future energy needs. Furthermore, it was essential for the formulation of energy policy to have local energy research capacity. Indeed, the formation of energy policy would be handicapped without a capacity to conduct energy policy research (on, for example, energy pricing) as well as technical research on the conversion of energy.

25. The need to understand energy end-uses when developing an energy aid and research program was endorsed by all participants. Such knowledge was largely lacking. The costs to developing countries of setting their energy research plans without a clear understanding of energy end-use requirements have been particularly well illustrated by the history of power sector projects carried out by many bilateral and multilateral aid programs. Stigler's Gorge Hydro Scheme in Tanzania was described as one such case in which the opportunity cost of the financial resources and the skilled and professional manpower absorbed by this project had been found not to be justified by the benefits of current and near-future end-use needs. Not only is the use of electricity a small proportion of secondary energy consumption in many Third World countries, but centralized electrification programs have been found to skew the benefits towards the future and towards urban populations. Such examples of a mismatch between sources of supply and end-use requirements are not however confined to large-scale projects; they are also to be found in small-scale technologies such as solar cookers, improved wood stoves, photovoltaics and wind powered devices.

26. In this context it was argued that research should be undertaken at the macro level to reduce the level of uncertainty faced by policy makers and to minimize the huge cost of possible error. The costs of making the wrong choice arose from a profound ignorance of the resource base, the wide range of technical and non-technical policy options, the heavy cost and long lead time associated with much energy supply infrastructure.

27. While some participants felt the most important contribution the industrialized countries could make was technical expertise and finance, others impressed upon the meeting that energy policy makers in all countries are faced with an unmanageable amount of technical data, with few independent and authoritative sources from which comparative evaluations could be made. Furthermore, by offering only a technical expertise (in, for example, nitrogen fixation, woodstove efficiency, or nuclear energy) biases were unintentionally introduced to the range of energy policy options identified and in the resultant social policy options available to developing countries. Aid donors have a role to planning capacities so that they can choose between the range of

technical and non-technical policy options. Such capacity must enable them to compare options: to evaluate the effect of the various options on meeting energy needs and to identify the effect of various options on the process and pattern of development. But it was also suggested that while it may be generally agreed that there are no "technical fixes", there might not be any "policy fixes" either.

(iii) The location of research

28. When considering research funding policy it was suggested that a useful distinction could be made between the types of research that were best carried out in developed countries and those best carried out in developing countries. Developed countries may be best placed to provide technical assistance and financial assistance, while policy makers, field researchers and extension officers in developing countries are best placed to identify energy end-uses and to recommend technical and non-technical options (given local resource constraints) for meeting these energy needs.

29. Clearly, care should be taken not to generalize about developing countries which have a considerable range of technical capability. Many donors have found it difficult to encourage good research in many developing countries. It was suggested that for countries with little indigenous research capacity, donor efforts should concentrate on the replication of technologies proven somewhere else with emphasis on their reliability and economic viability under local conditions. This would not preclude the need to build some indigenous research capacity in developing countries. For instance, the adaptation of existing technologies will inevitably require some basic scientific capacity and research skills. A number of participants stressed the need for aid donors to mobilize a range of technical capabilities within developing countries.

(iv) Public vs. private sector energy research frontiers

30. One suggested method in the setting of priorities for energy research donor activities was the identification of technically promising energy devices that are uneconomic in the short-run and which therefore will attract few commercial research and development activities. Examples of such technologies were small power packs for electrical generation of less than 100 kW, producer gas, battery storage, woodstoves and solar crop drying.

31. It was pointed out, however, that there was a need to consider how those energy technologies that would be of little interest to local private or multi-national corporations could be diffused. The necessity was stressed for synergy between groups who can carry out the research and development of a technology from the lab through to demonstration, adaptation and diffusion in the field. This linkage between the lab and field is critical because of the repeated failures of technologies created in isolation and un-matched to energy needs. Some participants stressed that in general technology is not

transferable without adaptation. No consensus was reached on how the research, development, demonstration and diffusion process could be divided between developing and developed countries.

32. It was argued that in a realistic comparative economic evaluation the mechanism by which the technology will be diffused must be anticipated - in this case the private market mechanism. But it was also noted in this context that in many developing countries the public sector was a more significant consumer and producer of energy than the private sector. Therefore, conservation through pricing policy had been found to be less effective or predictable than had earlier been suggested.

(v) Research methods

33. At a number of points in the discussion emphasis was given to the role donor agencies could play in developing and improving research methods. Four areas were currently considered to be either qualitatively weak or quantitatively inadequate:

a) overall energy assessment at the national level;

b) the comparative evaluation of small scale energy conversion devices;

c) energy end-use assessments; and, (perhaps to a lesser extent)

d) the broad range of energy economics such as demand forecasting and energy pricing.

SECTION III

Other issues

A - A Japanese proposal to establish an International Energy Training Centre in Yokohama City.

34. Mr. K. Sumi from Yokohama City University described to the meeting the proposal for a United Nations Institute for Research and Training on New and Renewable Sources of Energy. The function of such an institute would be to organize research programs for promoting the development and utilization of new and renewable sources of energy, and play a catalytic role to encourage and coordinate various research activities at national, regional and international levels. The proposed institute would also help to meet the required educational and training needs of the developing countries. Although the meeting did not have a mandate to declare official support for the Japanese proposal, several participants extended personal interest in such an institute.

B - Follow up to the UNERG conference in Nairobi

35. Dr. Iglesias described recent events in the follow-up to the Nairobi plan of action. The points he made and the subsequent lively discussion have not been described in this record as the issues have been the subject of future discussion and change, subsequent to the Ottawa meeting.

Section IV

Mechanisms to improve donor support for energy research

36. A number of mechanisms were discussed which might improve the donor agencies' capability to support effective energy research related to developing countries. Insofar as agreement was reached to pursue some of these mechanisms, these are summarized in the next section.

37. The discussion made a distinction between those mechanisms primarily directed at donor agencies and those mechanisms primarily directed at the research community. It was recognized that formal channels of communication between donors had not been very effective in addressing energy research, perhaps because of the more pressing concerns to coordinate capital aid. The Ottawa meeting was the first informal initiative in this direction and appeared to fulfill a need. Discussion of other informal groups, such as the Group for Assistance on Systems Relating to Grain After Harvest (GASGA), suggested that such informal mechanisms could be effective in meeting the needs of aid administrators for specific areas such as energy research support. While "energy research policy" might be too broad a category to be useful to scientists there were clear advantages in research fund administrators keeping such a wide overview.

38. The idea of a Technical Advisory Committee (TAC) in energy was discussed at some length. It was suggested that its role might be similar to that of the TAC on agriculture and ACAST (Advisory Committee for the Advancement of Science and Technology) although doubt was expressed about the lack of effectiveness of this latter group. The Energy TAC might be a high level group (possibly under UN auspices) to comment on the direction of energy research. In general, the idea of a TAC for energy did not attract the support of the meeting but the following points were made during the discussion:

- acceptance of a TAC or Steering Committee would depend on its role - advisory or an implementing agent?

- setting up a TAC before defining its functions and goals would be like putting the cart before the horse; was it to be concerned with all aspects of aid to the energy sector or merely research, for instance?

- nobody, TAC or otherwise, should share the responsibilities of political and financial advisor. If it is a funding clearing house then it should be concerned only with practical matters;

- if a high-level technical advisory group makes only high-level general statements then it will be of limited value except for providing donors with a mechanism for "growing up together;"

- energy is a very wide topic but if it is compartmentalized it runs the risk of encouraging technical solutions looking for problems. The technical problems associated with energy must not be separated from the policy implications of the various technical problems (and solutions). The question asked predetermines the answer given;

- technical research does not have to be managed as much as facilitated;

- there was no need for another TAC that would act as a clearing house of projects.

39. Turning to the issue of specialist groups at the scientific level it was clear that such groups already exist in a number of fields; they had grown out of the perceived needs of researchers. But not all participants at the meeting knew of the existence of these groups; the various groups had very different forms and roles (some being open and others closed); and they rarely involved researchers from developing countries. The following groups were said to exist and to undertake some form of coordination:

- The Woodburning Stove Group
  c/o Dept. of Applied Physics and Mechanical Engineering
  University of Technology
  Eindhoven
  The Netherlands

- The Steering Committee on Wind Energy in Developing Countries (SWD)
  c/o DHV Consulting Engineers
  P.O. Box 85
  3800 AB
  Amersfoort
  The Netherlands

- The Producer Gas Group
  c/o the Beijer Institute
  Box 50005
  S-104 05 Stockholm
  Sweden

40. A number of research areas appeared to be neglected and might benefit from donor agency assistance in the formation of specialized groups of

interested researchers. A list was drawn up and one or more participants were identified to explore the possibilities for arranging a specialist group on the subject (see next section for details).

41. It was further suggested that there was a need for specialized groups to collaborate with a wider range of expertise, particularly in developing countries. For example, a group doing purely technical research (such as the Woodburning Stove Group at Eindhoven) could team up with social scientists (economists, sociologists) and groups specializing in field research and extension work. This approach would facilitate:

- better communication between groups involved with energy research;
- synergetic activity between the lab and the field;
- an outlet for technical research, as well as a mechanism for feedback of socio-economic research to technical researchers which would stimulate field researchers to identify energy end-uses;
- help to increase capacity in developing countries in research and development, extension, diffusion and production facilities.

Section V

Agreed Action

42. In keeping with the informality of the meeting various informal agreements to collaborate over specific activities were reached by groups of participants during corridor discussions. For instance, the idea of a meeting to advance the state of research methods associated with the development and assessment of woodstoves was supported in principle by participants from Holland, the US, IDRC, and IBRD.

43. Participants agreed that a number of research areas appear to have been neglected by the donor agencies. These areas are listed below together with the participants who expressed interest in examining whether further attention would be useful and feasible:

(i) energy assessment (including energy demand analysis, end-use analysis, energy pricing and energy economics),IBRD (Julius)

(ii) draft animal power, BOSTID (Hurley) and The Netherlands (Floor)

(iii) conservation, CIDA (Bouchard)

(iv) the innovative use of conventional energy (including compressed natural gas), The Netherlands (Floor); methanol, small scale gas fields, power developments and coal conversion technology, IBRD (Weiss), AID (Vanderryn)

(v) non-tree biomass, BOSTID (Hurley)

(vi) mini hydro, BOSTID (Hurley)

(vii) energy research planning, IDRC (Barnett)

(viii) small power packs, UN (Lovejoy)

(ix) power for irrigation, BOSTID (Hurley)

(x) evaluation methodologies, AID (Klein)

(xi) energy and farming systems, (UNU?)

44. The meeting did not feel it had a mandate to approve the ideas for a Technical Advisory Committee (TAC), a UN Project Clearing House, or the Japanese proposal for an International Energy Training Centre.

45. It was agreed that the participants would continue to exchange information on their energy research activities. In this connection IDRC undertook to investigate the needs and range of options that might be considered in the establishment of a system for exchanging information of donor research activity in the energy sector. Donor agencies would be consulted on their needs, the current status of their own internal project information systems and they could be informed of the results of the investigation. The range of options considered would include the highly quantitative computer system to a more qualitative newsletter reporting on new developments. Consideration would be given to the feasibility of exchanging information on proposed projects in the "pipeline" as well as projects currently in process.

46. It was also agreed that IDRC (Andrew Barnett) would organize a similar informal meeting in about one year's time. However, it was agreed that the next meeting should allow time for smaller group discussions on particular research topics, such as those listed in paragraph 43 above. In addition, general discussions might consider the following areas:

(i) donor research policy

(ii) evaluations of existing project effectiveness

(iii) energy economics

(iv) an inter-donor information system (as in para.45 above)

(v) developing country energy research policy.

47. Suggestions for the form and content of the next meeting should be sent to Andrew Barnett at IDRC.

Annex I

LIST OF PARTICIPANTS

Energy Research Donors Meeting

April 20-21, 1982

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Annex II

BACKGROUND NOTES, PROVISIONAL AGENDA AND INFORMATION CHECKLISTS

prepared for

The Energy Research Donors Meeting, April 20-21, 1982, IDRC, Ottawa

The problem

Almost all aid programs have been recently reorganized to give greater emphasis to energy problems. Understandably much of the reorientation has focused on changes in capital aid and discussions of the international financial system. The question of research related to the energy sector of developing countries has therefore often taken a secondary position. Consequently less is known about energy research than is known about other aid to the energy sector and less attention has been given to planning energy research strategies.

Concern over this situation has recently surfaced among research fund administrators. Preliminary discussions with such people suggest that this concern appears to involve at least the eight related issues described below. However it must be stressed at the outset that what follows does not necessarily represent the views of all participants at the Ottawa meeting:

(i) a concern that discussions of energy research in existing international fora have been inadequate. For instance, the expert group on Energy Research for the UNERG Conference was not only severely hampered by a number of well known institutional constraints but also by lack of knowledge about what research was going on and what resources were available for future research. Similarly this lack of knowledge about what is going on is reflected in the most recent data that the DAC has produced on the energy related activities of aid donors. Although in many ways a useful set of statistics, they are for 1979 and the relevant table shows no expenditure by any donor for the category which includes "research" and only $5.3 million for the "predevelopment" which includes "feasibility studies" and "testing." This lack of information is even more acute in relation to the future plans and procedures of the donor community;

(ii) a concern that a number of agencies were deferring actions on energy research until a clearer picture emerged about what others planned to do. But the picture is still not clear;

(iii) a concern that much of the research that was aid funded was largely ad hoc and did not represent a coherent strategy. Much of the earliest research appears to have been predominantly of the "trouble shooting" variety with its main purpose to educate the agencies about energy problems and the available technologies. The research was often in the form of consultancies, was of short duration and necessarily highly duplicative, relying heavily on a limited number of primary sources of information;

(iv) concern over the generally poor quality of the rapidly expanding literature relating to energy problems in developing countries. It is often suggested that less than 20% of this literature has any value. A large proportion of the literature is produced in developed countries, is partisan (often in support of a particular device) and rarely attempts to provide an understanding of the energy problem (see for instance, the small number and poor quality of rural energy surveys or the lack of end-use data);

(v) concern over the limited number of researchers known to the donor agencies and the resultant competition for their services;

(vi) concern over the lack of attention to establishing adequate research methods particularly in relation to rural energy surveys and the socio-economic and technical evaluations of energy devices for use in rural areas;

(vii) a concern that distribution of aid funded energy research appears to be skewed towards a very limited number of countries and topics;

(viii) a concern that energy problems (particularly those involving rural people) are more complex and intractable than previously thought. See for instance the preliminary evidence from projects involving biogas, woodstoves, rural electrification (e.g. the forthcoming study by Bina Agarwal on the diffusion of wood fuel technologies to be published by IDRC in 1982 and study on a similar subject currently in preparation by the US National Academy of Sciences).

The purpose of the meeting

The meeting's purposes are the modest ones of providing:

(i) an informal exchange of information about the current and future activities of donor agencies in the area broadly described as "energy research";

(ii) an exchange of information on the objectives and the procedures guiding each agency's support for energy research;

(iii) initial discussions on the need for, and possible forms of, mechanisms for improving the effectiveness of such aid.

It should be stressed that the meeting is intended to be for "practitioners" and it is not intended to be a negotiating body; in particular it is not intended (even if it were practicable) that the meeting should agree on a list of energy research topics for priority action.

A summary record of the meeting will be produced for the use of participants. This record, together with any other relevant information, will be circulated more widely only if this is acceptable to participants.

Provisional agenda

The following list sets out the suggestions received so far for inclusion in the meeting. Other topics may be added before the meeting. How much of the agenda can be adequately discussed over the two days meeting will depend largely on how many participants have been able to circulate written descriptions of their programs to other participants before the meeting. It is hoped that participants will circulate their program descriptions to each of the participants shown in attached list by April 2, 1982.

(i) Approval of agenda, timetable, procedures and the rapporteur's role.

(ii) Review of agency plans for energy research support:

Each agency has been asked to prepare a brief report (using existing material where possible) of its current and future activities. A checklist (attached) is provided to indicate the kinds of information that might usefully be provided. It is hoped that the participants will distribute their reports to all other participants (addresses attached) before the meeting. To the extent that this is possible the discussion can focus on the general pattern of research activities (the scale, topics, geographical distribution) with a view to identifying the gaps and unproductive duplications of effort.

(iii) Review of agency procedures and constraints for support of energy research:

As with the previous agenda item, participants are asked to prepare and distribute beforehand a note on this topic using the checklist provided as a guide to information that may be useful.

The discussion may focus on:

(a) the methods used to identify research priorities;

(b) the extent to which constraints faced by individual agencies can be lessened by collaborating with other agencies.

(iv) Discussions of the need and possible mechanism for improving aid supported energy research

This item might include discussions of:

(a) register of on-going and completed aid funded energy research;

(b) improvement of mechanisms for exchanging views on energy related research (international conferences and specialist working groups such as the Woodstove Group);

(c) improvement of mechanisms for encouraging energy research strategies in developing countries (e.g. SAREC's meeting, OLADE, Resource Systems Institute Hawaii, IDRC's Energy Research Policy Group, etc.);

(d) mechanisms for improving aid supported research in other sectors (such as agriculture) which might provide a useful model for energy research (e.g. Group for Assistance on Systems Relating to Grain After Harvest - GASGA);

(e) the usefulness of "energy" as a category and possible subgroups: regional, large vs small scale, rural/urban, commercial/non-commercial, policy studies, end-use categories (cooling, transport, static power, etc.).

(v) A standard method of reporting field tests of small scale energy conversion devices

A discussion of the proposal from USAID (Stephen Klein).

(vi) The question of international research related to energy and developing countries

(a) the World Bank proposal for biomass research (Charles Weiss);

(b) the current status in the discussions for an arrangement for financing international energy research similar to the Consultative Group on International Agricultural Research (CGIAR).

Annex III

DOCUMENTS PROVIDED BY THE PARTICIPANTS

to the

ENERGY RESEARCH DONORS MEETING

Ottawa, April 20-21, 1982

Source	Title
IDRC	1. Background Notes, Provisional Agenda and Information Checklists
	2. Checklist of Information to be Provided by Participants
	3. Provisional Participants List, April 19, 1982 List of Participants - Final, April 21, 1982
	4. Background Document - non-essential background reading
	5. IDRC Position Paper for Energy Research Donors Meeting
	6. Energy Research in Developing Countries: Guidelines for an IDRC Response by Andrew Barnett
	7. Agenda - Energy Research Donors Meeting, Ottawa, April 20-21, 1982
National Academy of Sciences-BOSTID Research Grants Program	8. Board on Science and Technology for International Development - Energy Research Actitivies
UN University	9. The United Nations University Newsletter, Special Issue, The Three Divisions
SAREC	10. SAREC's Support to Energy Research
	11. SAREC Workshop on the Strengthening of Energy Research Capacity in Developing Countries, Stockholm, 18-22 January 1982
	12. SAREC Annual Report

Ministerie Van Buitenlandse Zaken The Netherlands	13. The Netherlands Energy Assistance Program
IBRD	14. World Bank Energy Related Ongoing Research & Guideline Projects - Provisional
	15. The Research Program of the World Bank
World Bank-UNDP	16. Joint Study of World Bank-UNDP on Financial Requirements of Supporting Actions and Pre-Investment Activities for Development and Utilization of New and Renewable Sources of Energy in Developing Countries During 1980's. April 1982
UNDP	17. IDRC Energy Research Donors Meeting, Ottawa, 20-21 April 1982. The United Nations Development Program
OPEC Fund	18. OPEC Fund Cumulative Project Lending Geographical and Sectoral Distribution as of December 31, 1982
Federal Republic of Germany	19. New and Renewable Sources of Energy
EEC-Commission of the European Communities	20. ACP-EEC Consultative Assembly Report on ACP-EEC Cooperation in the field of Energy
	21. New and Renewable Energy Project Situation as of Mid-October 1981
	22. New forms of Energies: Facts and Fictions
	23. Fuelwood Conservation in the Developing Countries Commission Staff Paper. February 15, 1982
IEA	24. Workshop on Energy Data of Developing Countries, December 1978, Vol.1. Summary of Discussions and Technical Papers
	25. Energy, Research, Development and Demonstration in the IEA Countries, 1980. Review of National Programs, OECD, Paris 1981
	26. Annual Report on Energy Research Development and Demonstration. Activities of the IEA. 1980/81
DAC - Mr. Dehn, Chairman of the DAC Energy Correspondents Group	27. Minimum Information Checklist for Small Rural Energy Projects. - Draft -

OECD - DAC (US AID)	28. Renewable Sources of Energy: Research and Development Evaluation Network (Note by US Delegation)
US AID	29. Comments on A.I.D. Energy Research Activities Prepared for Energy Research Donors Meeting.
	30. A.I.D. - Financed Research (List of Projects)
	31. "Understanding Long-Term Consequences of Energy Development Programs in the Third World" by Donella H. Meadows. January 1982. Resource Policy Center, Thayer School of Engineering, Dartmouth Centre, Hanover, N.H. 03755.
Japan	32. A Guide to New Energy Development Organization
	33. Nairobi Programme of Action and After-Proposal on the Establishment of the United Nations Institute for Research and Training on New and Renewable Sources of Energy by Kuzuo-Sumi.
	34. The Constitution of the Japan Energy Law Institute.
	35. National Report of Japan for The United Nations Conference on New and Renewable Sources of Energy March 1981.

Other Related Documents Not Circulated

FAO	36. Consultation on the Establishment of the European Cooperative Network on Rural Renewable Energies, 1981
IBRD	37. Working Paper on Research and Technological Capacity for the Use of Renewable Energy Resources in Developing Countries.
The Woodburning Stove Group, Depts. of Applied Physics and Mechanical Engineering, Eindhoven University of Technology for Society, TNO, Apeldoorn, Postbus 513, 5600 MB Eindhoven, The Netherlands.	39. A Woodstove Compendium by G. Depeleire et al. for technical panel on fuelwood and charcoal on the UNCNESE, August 1981.
	40. A Study on the Performance of two metal stoves by The Woodburning Stove Group, February 1981.
	41. Some studies on open fires, shielded fires and heavy stoves, by The Woodburning Stove Group, October 1981.

THT, P.O.Box 217, Enschede, The Netherlands and/or SIDO, P.O.Box 1278, Arusha, Tanzania.

42. The Gasification by Partial Combustion Project in Tanzania. Progress Report, July 1980.

UK - ODA

43. UK Assistance in the New and Renewable Energy Sector.

Ministerie Van Buitenlandse Zaken, The Netherlands

44. Centre for World Food Studies; Technical Description of Food Processing Technologies in Developing Countries by J.S.O. van Asseldonk. January 1982.